

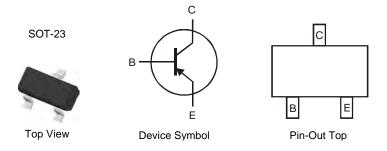
20V LOW V_{CE(sat)} PNP SURFACE MOUNT TRANSISTOR

Features

- Epitaxial Planar Die Construction
- Ideal for Medium Power Amplification and Switching
- "Lead Free", RoHS Compliant (Note 1)
- Halogen and Antimony Free. "Green" Device (Note 2)
- Qualified to AEC-Q101 Standards for High Reliability

Mechanical Data

- Case: SOT-23
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish Matte Tin annealed over Copper leadframe.
 Solderable per MIL-STD-202, Method 208
- Weight: 0.008 grams (approximate)



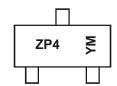
Ordering Information (Note 3)

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
DSS5320T-7	ZP4	7	8mm	3,000

Notes:

- 1. No purposefully added lead.
- 2. Diodes Inc's "Green" Policy can be found on our website at http://www.diodes.com
- 3. For packaging details, go to our website at http://www.diodes.com

Marking Information



ZP4 = Product Type Marking Code YM = Date Code Marking Y = Year (ex: V = 2008) M = Month (ex: 9 = September)

Date Code Key

Year	2009		2010	2011		2012	2013		2014	2015		2016
Code	W		Χ	Y		Z	Α		В	С		D
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	N	D



Maximum Ratings @ $T_A = 25^{\circ}C$ unless otherwise specified

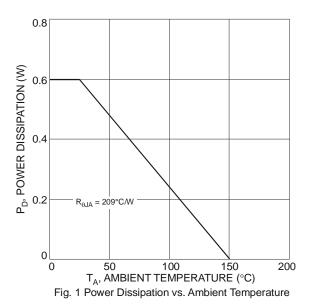
Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CBO}	-20	V
Collector-Emitter Voltage	V _{CEO}	-20	V
Emitter-Base Voltage	V _{EBO}	-5	V
Peak Pulse Current	I _{CM}	-5	A
Repetitive Peak Pulse Current (Note 4)	I _{CRP}	-3	Α
Continuous Collector Current	Ic	-2	A
Base Current	I _B	-0.5	A

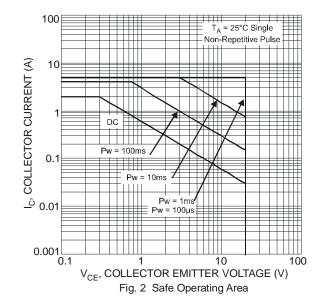
Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5) @ T _A = 25°C	P _D	600	mW
Thermal Resistance, Junction to Ambient Air (Note 4) @ T _A = 25°C	$R_{ hetaJA}$	209	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

Notes:

- 4. Operated under pulsed conditions: pulse width ≤100ms, duty cycle ≤ 0.25.
 5. Device mounted on 15mm x 15mm x1.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.



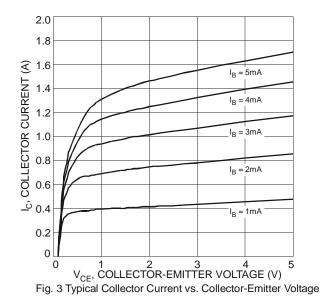


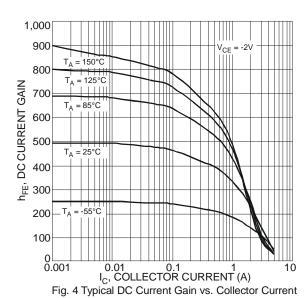


Electrical Characteristics @TA = 25°C unless otherwise specified

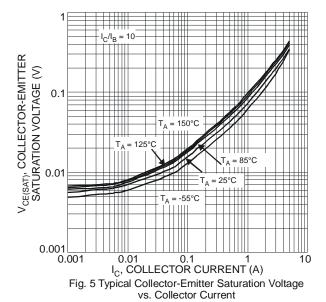
Characteristic	Symbol	Min	Тур	Max	Unit	Test Conditions
Collector-Base Cutoff Current	1	_	_	-100	nA	$V_{CB} = -20V, I_{E} = 0$
Collector-base Cuton Current	I _{CBO}	_		-50	μΑ	$V_{CB} = -20V, I_E = 0, T_A = 150$ °C
Emitter-Base Cutoff Current	I _{EBO}	_	_	-100	nA	$V_{EB} = -5V, I_C = 0$
Collector-Base Breakdown Voltage	BV _{CBO}	-20		_	V	$I_C = -100 \mu A$
Collector-Emitter Breakdown Voltage (Note 6)	BV _{CEO}	-20	_	_	V	I _C = -10mA
Emitter-Base Breakdown Voltage	BV _{EBO}	-5		_	V	$I_E = -100 \mu A$
		220	_	_		$V_{CE} = -2V, I_{C} = -0.1A$
		220	_	_		$V_{CE} = -2V, I_{C} = -0.5A$
DC Current Gain (Note 5)	h _{FE}	200		_	_	$V_{CE} = -2V, I_{C} = -1A$
		150	_	_		$V_{CE} = -2V$, $I_C = -2A$
		100	_	_		$V_{CE} = -2V$, $I_C = -3A$
		_	_	-70		$I_C = -0.5A$, $I_B = -50mA$
	V _{CE(sat)}	_	_	-130		$I_C = -1A$, $I_B = -50mA$
Collector-Emitter Saturation Voltage (Note 6)		_	_	-230		$I_C = -2A$, $I_B = -100mA$
		_	_	-210		$I_C = -2A$, $I_B = -200mA$
		_		-300		$I_C = -3A$, $I_B = -300mA$
Equivalent On-Resistance	R _{CE(sat)}	_	_	105	mΩ	$I_E = -2A$, $I_B = -200mA$
Base-Emitter Saturation Voltage	V	_	_	-1.1	V	$I_C = -2A$, $I_B = -100mA$
Dase-Emilier Saturation Voltage	V _{BE(sat)}	_		-1.2	V	$I_C = -3A$, $I_B = -300mA$
Base-Emitter Turn-on Voltage	V _{BE(on)}	_	_	-1.2	V	$V_{CE} = -2V$, $I_C = -1A$
Transition Frequency	f⊤	100	180	_	MHz	$V_{CE} = -5V, I_{C} = -100mA,$ f = 100MHz
Output Capacitance	C _{ob}	_	25	50	pF	V _{CB} = -10V, f = 1MHz
Turn-On Time	t _{on}	_	67	_	ns	
Delay Time	t _d	_	23	_	ns	
Rise Time	t _r	_	44	_	ns	$V_{CC} = -10V, I_{C} = -1A,$
Turn-Off Time	t _{off}		224		ns	$I_{B1} = -I_{B2} = -50 \text{mA}$
Storage Time	ts	_	184	_	ns	
Fall Time	t _f	_	40	_	ns	

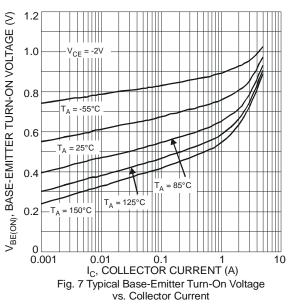
Notes: 6. Measured under pulsed conditions. Pulse width = $300\mu s$. Duty cycle $\leq 2\%$.

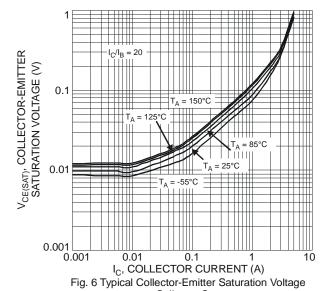


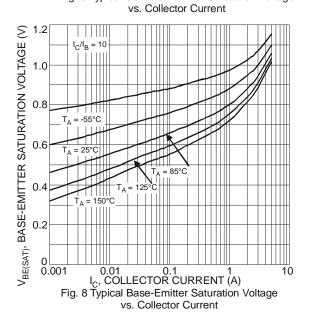




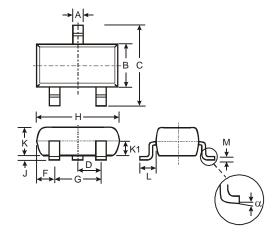








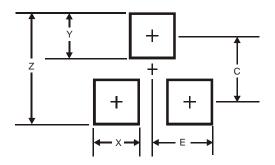
Package Outline Dimensions



	SOT-23						
Dim	Min	Max	Тур				
Α	0.37	0.51	0.40				
В	1.20	1.40	1.30				
С	2.30	2.50	2.40				
D	0.89	1.03	0.915				
F	0.45	0.60	0.535				
G	1.78	2.05	1.83				
Н	2.80	3.00	2.90				
J	0.013	0.10	0.05				
K	0.903	1.10	1.00				
K1	-	1	0.400				
L	0.45	0.61	0.55				
M	0.085	0.18	0.11				
α	0°	8°	-				
All	All Dimensions in mm						



Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.9
Х	0.8
Υ	0.9
С	2.0
E	1.35

IMPORTANT NOTICE

DIODES INCORPORATED MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. Diodes Incorporated does not assume any liability arising out of the application or use of this document or any product described herein; neither does Diodes Incorporated convey any license under its patent or trademark rights, nor the rights of others. Any Customer or user of this document or products described herein in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on Diodes Incorporated website, harmless against all damages.

Diodes Incorporated does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel. Should Customers purchase or use Diodes Incorporated products for any unintended or unauthorized application, Customers shall indemnify and hold Diodes Incorporated and its representatives harmless against all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized application.

Products described herein may be covered by one or more United States, international or foreign patents pending. Product names and markings noted herein may also be covered by one or more United States, international or foreign trademarks.

LIFE SUPPORT

Diodes Incorporated products are specifically not authorized for use as critical components in life support devices or systems without the express written approval of the Chief Executive Officer of Diodes Incorporated. As used herein:

- A. Life support devices or systems are devices or systems which:
 - 1. are intended to implant into the body, or
 - 2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.
- B. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or to affect its safety or effectiveness.

Customers represent that they have all necessary expertise in the safety and regulatory ramifications of their life support devices or systems, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of Diodes Incorporated products in such safety-critical, life support devices or systems, notwithstanding any devices-or systems-related information or support that may be provided by Diodes Incorporated. Further, Customers must fully indemnify Diodes Incorporated and its representatives against any damages arising out of the use of Diodes Incorporated products in such safety-critical, life support devices or systems.

Copyright © 2010, Diodes Incorporated

www.diodes.com

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Diodes Incorporated:

DSS5320T-7